

# Weatherization Assistance Program Notice 22-7 (WPN 22-7) Health & Safety Frequently Asked Questions (FAQ)

The Department of Energy (DOE) issued revised Health and Safety (H&S) Guidance, [Weatherization Program Notice \(WPN\) 22-7](#) to provide consistency in how H&S issues are addressed by Weatherization Assistance Program (WAP) Grantees. However, DOE has provided this FAQ document to provide additional clarification related to the implementation of WPN 22-7.

*Grantees: Contact your respective Project Officer for additional clarifications involving these H&S FAQs.*

*Subgrantees: The answers provided may vary due to requirements set by the Grantee's H&S Plan. Be sure to consult your DOE-approved H&S Plan for specific direction that is applicable for your state, territory, or tribal nation, and contact your Grantee for clarity on specific items.*

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## GENERAL

### General Definitions

- “Grantee” refers to the state, tribal nation, or territory who directly receives WAP funds.
- “Subgrantee” refers to the local agency implementing the WAP.
- “Program” refers to all the activity conducted under the direction of the WAP Grantee.

### Additional Resources

A separate document has been created to contain the additional resources references provided previously in the health and safety FAQ document. This document is linked on the main guidance page related to [WPN 22-7](#).

### Measure Skipping

Measure skipping has been removed from the H&S guidance and is addressed in [WPN 23-6 \(Attachment 8\)](#).

### Allowability

#### **Q. Why is a H&S measure allowed in [WPN 22-7](#), but my Grantee does not allow it?**

- A. Each Grantee has a different budget with different needs and limitations. The decision to include a specific H&S item within the Grantee’s program is a Grantee specific decision. While some H&S measures are “required” (e.g., American Society of Heating Refrigerating and Air-Conditioning Engineers (ASHRAE) implementation), the Grantee has the flexibility to determine if they will include “allowable” measures within their individual program and to choose the funding source for these.

#### **Q. Can I spend DOE H&S money when no DOE Energy Conservation Measures (ECM) are installed?**

- A. Yes, however the dwelling unit is not able to be categorized nor reported as a DOE Weatherized unit. The definition of a DOE Weatherized unit at the time of this writing and contained within the annual application instructions is “A dwelling on which a DOE-approved energy audit or priority list has been applied and weatherization work has been completed. As funds allow, the measures installed on this unit and paid for with DOE funds have a Savings-to-Investment Ratio (SIR) of 1.0 or greater, but also may include any necessary energy-related health and safety measures”.

Due to requirement that DOE funded installed measures with an SIR of 1.0 or greater be included to meet the definition of a DOE Weatherized unit, any dwelling units that solely have DOE funded H&S measures and no DOE funded ECM’s are not able to be categorized or reported as a DOE Weatherized unit.

### Case-by-Case

#### **Q. What does “case-by-case” mean?**

- A. “Case-by-case” indicates that the Grantee is not able to create a comprehensive policy related to the specific item but must instead provide specific guidance for the decision-making process. Where “case-by-case” is used in [WPN 22-7](#), the Grantee should view it as an opportunity to shape their H&S plan in a way that benefits from sound judgment based on program regulations and knowledge of local conditions. For instance, the Grantee may require additional review or analysis of a situation to ensure that cost-effective guidelines are considered. “Case-by-case”

provides flexibility to the Grantee while requiring that the rigor of review for case-by-case decisions be documented in the Grantee's plan.

### Minor and limited repairs

**Q. When the guidance refers to “minor” or “limited” repairs being allowed, what does this mean?**

- A. These thresholds, where repairs go from being “minor” or “limited” and addressable through WAP to being “major” and potential cause for deferral, must be defined in the Grantee H&S Plan to assure that spending stays within the allocated per unit average for health and safety expenditures. This definition could be a total cost, percentage of job cost, or some other objective metric which regulates expenditures on specific H&S items. Subgrantees should reference the Grantee's currently DOE-approved H&S plan for the specific limits that apply to each category.

### Budget Categories and Definitions

**Q. How do I determine if a measure is a H&S item or Incidental Repair Measure (IRM)?**

- A. Some H&S measures could potentially fall under the definition of an IRM as defined by regulations and guidance. See [WPN 19-5](#) for guidance relating to IRM within the WAP. H&S is the default category of all measures listed in [WPN 22-7 Table of Issues](#); however, if the Grantee chooses to address any of these items as an IRM it must meet the definition of an IRM per [WPN 19-5](#) and be defined as such within the Grantee H&S plan, including any case-by-case determinations and their process. Grantees should carefully consider the approach to be taken when they draft their H&S procedures. While ease of accounting is an important consideration, Grantees should keep in mind that activities assigned to the H&S budget category do not have to be cost justified by the energy audit. The same items assigned to incidental repair, weatherization material, or installation cost categories must be cost-justified. Additionally, once the Grantee makes the decision as to which category these items are assigned to, WAP crews must follow the protocols in the approved H&S plan for the duration of the Program Year. There is a great deal of flexibility in crafting these definitions, so several questions should be asked when designing the plan:

- Is the measure necessary to perform weatherization, or needed to protect the occupant because of weatherization activities?
- Is the measure specific to ensuring the H&S of the occupant/worker?
- Is the activity a component of an efficiency measure (as with a flue liner when combustion equipment is replaced as an ECM) and therefore not H&S?
- What parts of a measure would have been conducted anyway, without consideration for the H&S guidance?
- Could there be circumstances where the item could qualify as an IRM or H&S measure?

Issues such as minor electrical repair (including knob-tube-wiring) and minor roofing repair could potentially be identified in the Grantee Plan as IRMs. For example, Grantees could define roof repairs specifically two ways: (1) on homes that will receive no attic insulation as part of WAP, roof repairs could be considered H&S costs since they will help prevent mold and moisture issues; and (2) roof repairs on homes receiving attic insulation could be treated IRMs, since they will “preserve or protect” an installed measure.

**Q. How do I separate costs of a H&S measure that is required as part of an efficiency measure?**

- A. If the H&S activity is not a direct ancillary component of the efficiency measure, then it can be charged as a H&S cost. As an example, if you are installing dense-pack sidewall insulation in a home with lead paint on the walls, the lead-safe work-related costs can be charged separately as

H&S costs, and not included in the SIR calculation. When determining cost break down, consider what labor and materials costs would be associated with the installation if the home had no lead paint. Everything else specific to lead-safe work practices, that would not have happened otherwise, may be charged as H&S costs.

**Q. What if a H&S measure can be cost-justified as an efficiency measure?**

- A. Where a measure has the potential to be an ECM, always attempt to cost justify the measure using your energy audit procedures prior to considering it for H&S costs. There are instances where a measure can be considered either a H&S measure OR an ECM. Most appliance replacement measures such as furnaces, air conditioning, or water heaters could potentially be cost justified as an ECM. In those instances where the measure has an SIR of 1.0 or greater, the measure must be treated as an ECM. In those instances where the measure does not have an SIR of 1.0 or greater, the measure can be treated as an H&S measure.

### Deferral Requirements

**Q. Previous guidance required outlining the deferral policy in the H&S plan. Where do I outline this policy now?**

- A. DOE believes it was redundant for Grantees to identify their deferral policy for H&S matters within their H&S plan, and to also detail their deferral policy for incidental items within their master plan. Grantees are now to provide a single deferral policy as part of their Master Plan that details all H&S and incidental items which would require the difficult decision to defer, referral procedures, and client notification procedures. Grantees are still required to indicate in their plan any thresholds that would trigger deferral.

## AIR CONDITIONING (A/C), HEATING SYSTEMS & COMBUSTION APPLIANCES

### A/C Systems

**Q. Why are A/C systems the only system that can be added or replaced as H&S for “At-Risk” clients?**

- A. Federal regulation and local codes require permanently installed heating systems for Certificates of Occupancy in all jurisdictions, and no weatherized home may be left without a primary heating system for the conditioned space, hence the default H&S allowance for heating system repair or replacement. This universal habitability requirement does not apply to cooling systems in all parts of the country which means that DOE needs justification for specific instances of cooling system repair or replacement, and in some cases as an addition, as a H&S measure.

### Bulk Fuel Tanks

**Q. When a bulk fuel tank has been decommissioned but is left in place due to weatherization activities, what information are Subgrantees required to provide to the clients?**

- A. If weatherization is replacing a mechanical system, decommissioning, and leaving in place the existing bulk fuel tank, the Subgrantee must complete client education to this potential environmental hazard. Client education topics are to (not all-inclusive) advise clients that there are rules about future potential disposal and provide contact information for the appropriate authority having jurisdiction (AHJ) for further questions or concerns.

### ECM vs. H&S

**Q. If an air conditioning or heating system is deemed unsafe, why do I need to test it for cost-effectiveness before replacing with H&S funds?**

- A. The regulatory purpose of this Program is to save energy for our clients while maintaining their health and safety. If a potential measure may possibly meet an SIR of 1.0 or greater, the WAP must categorize the measure as an ECM per [10 CFR 440.16\(h\)](#). Also see answer to question above in the “Budget Categories and Definitions” section.

### Space Heaters

**Q. If the client is currently using portable electric space heaters as the primary heat source; can the home be left with these portable heaters as the primary heat source after weatherization?**

- A. No. Federal regulation and local codes ([2018 IRC: R303.10](#)) require permanently installed heating systems in all jurisdictions. After weatherization, all homes must have a permanently installed primary heat source that provides heat for the entirety of the conditioned dwelling space. If there is not a central system previously installed in the home, then the home should have a new system installed using either WAP funds or an alternative source (e.g., Low Income Home Energy Assistance Program (LIHEAP), Utility). This new system may be installed as a H&S item, or as an ECM if the energy audit supports its installation by considering the replacement of the portable electric space heaters as the primary heat source, typically with a heat pump. Also see previous question relating to “ECM vs. H&S”.

**Q. What specific guidance does DOE provide relating to “space heaters”?**

- A. The [WPN 22-7 Table of Issues](#) addresses space heaters, fireplaces, and other specific heating-related issues in the “Air Conditioning, Heating Systems, and Combustion Appliances” section. Some questions might also be answered in the “Fuel Leaks” portion of the [WPN 22-7 Table of Issues](#).

**Q. The [WPN 22-7 Table of Issues](#) indicates that unvented fuel-fired space heaters that meet American National Standards Institute (ANSI) Z1.11.2 may be left as secondary heat sources in single-family homes. Does this include manufactured housing?**

- A. No. [24 CFR 3280.707\(b\)](#) requires that manufactured homes may not be left with any unvented fuel-fired space heaters, even as secondary heat sources. If the client will not permit the removal of unvented fuel-fired space heaters the home shall be deferred.

### Unsafe – Clarification

**Q. What constitutes an “unsafe” secondary unit?**

- A. The International Residential Code (IRC), manufacturer installation instructions, and various industry standards (e.g., Building Performance Institute (BPI) 1200, Residential Energy Services Network (RESNET), ANSI, etc.) describe safe installation and testing protocols and action levels for combustion appliances. If Grantees wish to provide further clarifications, they are encouraged to do so in their H&S Plans and/or Policies and Procedures manuals. Additionally, any unvented fuel-fired space heaters that are not labeled as meeting ANSI Z1.11.2 are considered unsafe.

### Combustion Safety Testing

**Q. Is combustion safety testing required for gas appliances outside the thermal boundary?**

- A. Yes. [WPN 22-7 Table of Issues](#) requires the combustion safety testing of all combustion appliances at the home regardless of location within the home. This means that even when located in adjacent unconditioned spaces such as garages, attics, crawlspaces, etc. they must be tested and inspected for safety (spillage, Carbon Monoxide (CO), Steady State Efficiency (SSE), venting, etc.).

### Fireplaces

**Q. Is there any guidance about how to treat fireplaces or woodstoves?**

- A. Yes, [WPN 22-7 Table of Issues](#) provides additional clarifications for fireplaces and woodstoves. Though there is no consensus on how to test for safe fireplace operation, the table of issues provides guidance on visual inspection and combustion appliance zone depressurization testing. If an issue is detected, the client must be informed and suggested local resources are provided to address the issue if not addressable as part of the weatherization process.

### ASBESTOS

#### Testing/Sampling

**Q. Is baseline environmental sampling of asbestos an allowable DOE WAP H&S expense?**

- A. Yes. This testing is an allowable cost when Grantee has written policy in place that determines the responses to the sampling results. For example, if a Grantee policy outlines action levels resulting in deferral/referral, then baseline sampling is an allowable expense.

#### Asbestos Hazard Emergency Response Act (AHERA) Certification

**Q. Do weatherization workers have to be licensed/certified to identify suspected Asbestos Containing Materials (ACMs)?**

- A. No. Licensing/certification of workers is only required in the cases where the workers will be conducting work that requires such licensing/certification. Being aware of common ACMs is a basic training that can protect workers' health and should be part of the Grantee's Training and Technical Assistance (T&TA) plan.

#### Blower Door Testing

**Q. What guidance does DOE provide relating to the use of the blower door when friable asbestos exists in the home?**

- A. The [WPN 22-7 Table of Issues](#) requires Grantees to have written policy regarding the use of the blower door when confirmed or suspected ACM is identified in the home, including vermiculite. The guidance is formulated to allow flexibility in determining a policy that will work best for the Grantee's housing stock and situations.
- i) If the Grantee's policy indicates that blower door testing will not be performed in a home under certain situations (e.g., to prevent disturbing vermiculite containing asbestos), then the Grantee should have a policy for establishing a dwelling leakage rate to be used in energy modeling including policies regarding the work to be performed where the potential for worker or occupant exposure exists.

**Q. If a unit is deferred due to the client removing ACM and not providing the proper documentation indicating that it had been removed properly, is the unit to remain deferred even if a lengthy amount of time has passed and the client reapplies for weatherization? Also, what if a new client moves into the residence, can the new client receive weatherization services?**

- A. Moving forward on a project with the knowledge of missing documentation would potentially place Subgrantees workers in danger and put the Subgrantee in a position where they are potentially liable for health risks to the workers and occupants of the dwelling. If the Subgrantee has deferred a home which then results in the owner removing asbestos containing materials, it is required that the proper documentation be provided to the Subgrantee prior to allowing weatherization services to move forward. If the proper documentation cannot be provided, the home must remain on deferral. If several application cycles later, the residence in question reapplies for weatherization, it would be expected that the Subgrantee would reaffirm the need to keep the dwelling in the deferred status. This requirement is in place to protect the safety of not only the weatherization workers, but also the occupants of the building and the Subgrantee as a whole.

## **BIOLOGICALS AND UNSANITARY CONDITIONS**

**Q. The guidance mentions that “limited remediation” of conditions that may lead to or promote biological concerns is allowed. What does this mean?**

- A. This means that simple repairs that prevent the development of biological concerns such as addressing a leaking sewer pipe, or water intrusion leading to rot may be allowed as H&S measures if defined as such in the Grantee’s DOE-approved H&S plan.

## **BUILDING STRUCTURE AND ROOFING**

**Q. What guidance is available regarding roof repairs using WAP funds?**

- A. [WPN 19-5](#) is the most current guidance provided by DOE for roof repair using WAP funds. Roof repair may qualify as either an IRM or a H&S measure depending on the circumstances and how the Grantee develops their specific policies.

## **CODE COMPLIANCE**

### **Bringing Homes up to Code**

**Q. Can WAP bring weatherized homes up to local code?**

- A. No. It is beyond the scope of WAP to bring existing homes up to current codes. Only where installation of weatherization measures triggers a code compliance issue are technicians required to meet that code. An example might be if you are insulating the attic of a home with unsafe wiring, local codes may require upgrading the wiring as part of the insulation job, or the local jurisdiction requires hard-wired smoke detectors to be installed if the home is weatherized. Guidance now clarifies that the client file should include reference to the local code that was triggered, and which measure triggered the code compliance issue.

### **Client Education**

**Q. Are we required to notify the client of ALL issues identified in a home that are not code compliant?**

- A. No, only those issues that result in a deferral of weatherization services and those that the energy auditor or final inspector incidentally identifies while conducting weatherization activities.

## ELECTRICAL

### Light Fixtures

**Q. Can light fixtures that have been determined to have unsafe wiring be replaced as a H&S measure?**

- A. Electrical repairs should be kept to a minimum and only completed when conditions meet the criteria for performing such a repair. If a light fixture is determined to pose a H&S hazard to workers when completing an associated measure, or a H&S hazard to residents after the measure is completed, the fixture may be replaced at that time as a H&S measure.

### Knob & Tube Wiring

**Q. Can insulation be installed over live knob & tube wiring?**

- A. Not in all cases. The Subgrantee should consult local code requirements and seek guidance from their Grantee. Some jurisdictions allow insulating over knob & tube wiring once certain conditions have been met. It is the responsibility of the Grantee and Subgrantee to follow the local AHJ when completing measures. Grantees can provide clarification of local requirements in their H&S plan and Policies and Procedures manuals.

## FUEL LEAKS

**Q. If the auditor discovers a fuel leak during the audit process, what actions should they take?**

- A. The Grantee's audit procedures are to detail how this issue is to be addressed including when emergency repair services should be contacted or when the home should be evacuated for client safety. Each Grantee must determine what the appropriate actions are, however, some actions that may be considered are red-tagging or rendering the appliance inoperable, turning off the main fuel supply to the home, contacting the utility emergency services, contacting the fire department, or repairing minor leaks onsite. All fuel leak testing and results should be documented in the client file.

**Q. If the fuel leak is the responsibility of the client to repair, versus the utility, does weatherization have to repair the leak?**

- A. Yes, if the weatherization work is to be performed. If the choice is to defer the home due to the fuel leak, then prior to weatherization, the Subgrantee must notify the client of the specific item to be repaired prior to work proceeding and confirm its repair.

## GAS OVENS/STOVE TOPS/RANGES

### Replacement

**Q. When can we replace an unsafe gas range? Repair is often costly and sometimes ineffective.**

- A. DOE recognizes that at times repair of an unsafe gas range or oven is not possible. The Grantee may replace "unsafe" appliances on a "limited" basis. The Grantee must have policy in place to describe the "limits" of the replacement of only "unsafe" gas ovens/ranges. Use of H&S funds to electrify homes is not an allowable H&S expense, but regular Program Operations funds may be used if fuel-switching is cost-effective.

## HAZARDOUS MATERIALS DISPOSAL

### Q. What regulations affect how to dispose of hazardous materials?

- A. The Environmental Protection Agency (EPA) is the federal regulating body which oversees hazardous material disposal. Grantees and Subgrantees are also required to follow the AHJ, which may have more stringent disposal requirements than the EPA. Find out more information at [EPA's hazardous waste information webpage](#).

### Q. The guidance indicates that removal of pollutants that pose a risk to workers is required, does this mean that any product that contains an air pollutant should be removed prior to work beginning?

- A. Any product that potentially presents physical harm to the workers and cannot be mitigated through personal protective equipment (PPE) (e.g., respiratory protection, face shields, gloves, etc.) must be removed from the work area. In some cases, deferral may be necessary if it is not possible to protect the workers or if the client refuses to allow the removal of these materials.

## INJURY PREVENTION OF OCCUPANTS

### Limitations

### Q. Why can't I install general injury prevention measures for the occupants (e.g., porch boards, safety lighting, stair treads/rails) using H&S funds?

- A. The WAP is not a home rehabilitation program. Installing items such as porches, stairs, and exterior lights are not allowed as health and safety costs because they are not "energy related health and safety hazards" ([10 CFR 440.16\(h\) – Minimum Program Requirements](#)) that are "necessary to effectively weatherize the home".

## LEAD BASED SURFACE COVERINGS (Paint, Varnishes, Roofing, etc.)

### Training Requirements

### Q. Are all workers required to have lead-safe weatherization (LSW) training?

- A. No specific individual is required to fulfill the EPA's Certified Renovator (RRP) role. It is required that any job that may potentially disturb lead paint must adhere to the EPA's RRP rule which requires that the job be supervised by a certified individual who works for a certified "firm" to ensure that proper precautions are taken. This can be the Crew Leader or another individual who is responsible for ensuring that H&S protocols are complied with. The RRP rule does require that all workers received some level of lead safe training related to the specific job tasks they may be fulfilling. For more information relating to the RRP rule see the EPA's lead safety information found here: <https://www.epa.gov/lead/lead-renovation-repair-and-painting-program>

## MOLD AND MOISTURE

### Window/Door Repair or Replacement

### Q. Can doors and windows be repaired or replaced as H&S measures?

- A. Door and window repair is allowable as a H&S measure if it meets the requirements outlined in [WPN 19-5](#). Door and window replacement or installation is not an eligible WAP H&S expense.

## OCCUPANT PRE-EXISTING OR POTENTIAL HEALTH CONDITIONS

### Client Health Screening

**Q. The Health Insurance and Accountability Act of 1996 (HIPAA) does not allow a Grantee or Subgrantee to solicit specific health conditions from clients. How are Grantees and Subgrantees supposed to request this information?**

A. The intent of the guidance is not to solicit specific medical conditions that clients may have, but to inform the client of how certain aspects of weatherizing the client's home may affect them if they have certain medical conditions and discuss what precautions the client and the Subgrantee can take during the riskiest part of the work. An example would be: "Mrs. Jones, we will be doing x, y and z to your home. Parts of this work may generate a lot of dust during installation. If you or any other residents have health conditions that might put them at risk during this work, let's talk about precautions we can take to avoid that risk."

## PESTS

### Air Sealing

**Q. Guidance states that screening of windows and access points is allowed, but routine air sealing also can serve to reduce pest infiltration. Is this allowed as a H&S measure?**

A. No. Routine air sealing is not an allowable H&S measure and must be included in the package of ECMs and cost-justified by the Grantee's energy audit process. This includes pest exclusion practices (e.g., utilizing metal mesh or flashing as backing for air sealing in areas where pest intrusion is likely) is a best practice and is encouraged as part of the ECM.

## RADON

### Precautionary Measures

**Q. What measures are required by DOE as part of the package of "precautionary measures"?**

A. The radon report ([Building Assessment of Radon Reduction Interventions with Energy Retrofits Expansion \(BEX\) Final Report \(ORNL/TM-2020/1769\)](#).) recently released by DOE laid out a basic package of measures that is recommended for all site-built dwelling that includes three basic measures: sump pump well/pit covers, sealed soil-gas retarder ground coverings inside the pressure boundary, and ventilation strategies. These three measures now have updated specifications located in the H&S section of the Standard Work Specifications (SWS) that apply to installing these measures. These measures are now a required part of the radon precautionary measures for all homes that receive weatherization utilizing DOE WAP funding.

**Q. Are we required to install poly over all exposed dirt floors?**

A. Yes, in all spaces that are inside the thermal/pressure boundary, which will typically be basements or crawlspaces that are not sealed out of the pressure boundary.

### Client Education and Notification

**Q. Does the informed consent form need to be a separate document?**

A. No, the informed consent does not need to be a separate form. Sample language that meets the requirements of the guidance has been provided and can be used on its own or added to existing client materials.

**Q. Should all clients receive EPA's "A Citizen's Guide to Radon" and the informed consent form, or only those in certain zones of the radon map?**

- A. All clients should receive the booklet and sign the informed consent form.

## Definitions

### **Q. What is meant by “radon mitigation”?**

- A. Radon mitigation is any system specifically installed to reduce radon gas concentrations in the breathing zones of occupied buildings or from water supplies. Mitigation of radon in the air is accomplished through ventilation, either collected below a concrete floor slab or membrane on the ground, or by increasing the air changes per hour in the building. This is not to be confused with installing ventilation to meet ASHRAE 62.2-2016 requirements which is required for all DOE WAP projects.

## **SAFETY DEVICES: SMOKE AND CARBON MONOXIDE ALARMS, FIRE EXTINGUISHERS**

### **Code Requirements for Smoke/CO Alarms**

#### **Q. What happens if code compliance requires the replacement of operable smoke/CO alarms or the correction of other health and safety issues that are not allowed in the current H&S guidance?**

- A. Code corrections are allowable H&S costs when they are required by the AHJ for weatherization work to be performed. You must note the specific code requirement with reference to the efficiency measure(s) that triggered the code compliance activity. If the code correction cannot be related to weatherization work, then WAP funds cannot be used to make the code correction.

#### **Q. What are the parameters for smoke/CO detection devices that are allowed in the WAP?**

- A. The SWS outlines the minimum specifications for WAP installed smoke and carbon monoxide alarms. If the AHJ requires more stringent installations, then its requirements supersede the SWS. Grantees may choose to add clarifying language in their Program technical resources.

#### **Q. Do I really need to install CO alarms in every home? ASHRAE says I need to install a CO alarm in every home, but it references National Fire Protection Association (NFPA) 720 installation standards.**

- A. Yes, every weatherized home must have functioning CO alarms located according to NFPA 720. If they are already present in all required locations and functioning properly, you may not need to install new ones. If there are not functioning CO alarms in the locations required by NFPA 720 ([superseded by NFPA 72](#)), you must install new CO alarms per the requirements of the SWS and NFPA 72. The ASHRAE 62.2-2016 standard requires the installation of CO alarms in every home. The reference to NFPA 720 is only for determining where and how to install these alarms. NFPA has since been replaced by NFPA 72, which mimics the same installation locations as NFPA 720.

## **VENTILATION AND INDOOR AIR QUALITY**

### **Existing Buildings Disclaimer**

The ventilation standards in ASHRAE 62.2 were largely conceived with new construction in mind. There is a normative Appendix A that addresses ventilation requirements in existing buildings that were occupied without meeting the provisions of the Standard. Given that WAP only works in homes already occupied, or which will be occupied in the very near future by income-eligible clients, all responses presented in these FAQs assume the use of the alternative compliance method described in Appendix A and may not include provisions contained within the Standard intended solely for new construction.

## General

### **Q. Must Grantees adopt the most current version of ASHRAE when it is updated?**

A. As of Program Year (PY) 2017, every Grantee is required to implement the ventilation requirements of ASHRAE 62.2 – 2016. Grantees are free to adopt more current versions and addenda as they are released, but it will not be required until further notice.

### **Q. What is the difference between local ventilation and dwelling-unit ventilation?**

A. Local ventilation, often referred to as “spot” ventilation, is intended to remove pollutants near their source, such as water vapor and odors in bathrooms and kitchens. Generally, the occupant controls local ventilation on an as-needed basis. Since local ventilation is intended to remove pollutants, and not simply dilute them, local ventilation is always exhaust ventilation properly vented to the outside of the building. Dwelling-unit ventilation, or “whole house” ventilation is intended to dilute the indoor air with fresh outdoor air, thereby reducing concentrations of pollutants already present in the air. Dwelling-unit ventilation usually operates continuously but may be designed to operate intermittently, if automatically controlled, to ensure appropriate ventilation levels are always maintained. Dwelling-unit ventilation may be exhaust, supply, or balanced ventilation.

### **Q. What is the purpose of the Alternative Compliance Path for existing dwellings?**

A. The Alternative Compliance Path was added to the ASHRAE Standard in 2010 to help ease compliance in existing dwellings (see Appendix A of the Standard). This compliance path allows one to increase the Cubic Feet per Minute (CFM) flow rate of the dwelling-unit fan to compensate for deficits in local ventilation (bathrooms and kitchens).

### **Q. May I leave existing local ventilation fans in place?**

A. Yes, you may leave existing bathroom and kitchen fans in place. They may be used to meet local ventilation rates if they are correctly ducted to the outside. They may also be used to meet dwelling-unit ventilation requirements if they are properly ducted to the outside, have adequate airflow, and have appropriate controls. Fan flow testing and post-retrofit verification are required.

### **Q. If I replace an existing ventilation fan with a new one, should I match the size of the existing fan, or should I comply with the Standard’s requirements?**

A. If replacing a local ventilation fan, the new fan must meet the minimum CFM flow and sound requirements of the Standard.

### **Q. May I terminate the ductwork for my ventilation fans in the attic, garage, or crawlspace if they are directly connected to the outside?**

A. No. All ventilation fans, local and dwelling-unit, must terminate directly to the outdoors using the proper vent termination. If it is discovered that existing fans are vented to an attic or other area within the building shell (e.g., basement, crawl space, garage, screened porch) the venting must be extended to the outdoors, or the fan must be removed completely and the hole patched, if the unit is to be weatherized.

### **Q. What types of residential structures does ASHRAE 62.2 apply to?**

A. ASHRAE 62.2-2016 applies to all residential dwelling unit spaces intended for human occupancy in all residential dwellings, regardless of building height. The Standard does not apply to transient housing such as shelters, dormitories, nursing homes, etc.

## Ventilation Requirements

- Q. Do I need to install dwelling unit ventilation if the final calculated ventilation rate is less than 16 CFM?**
- A. No. When the calculated ventilation requirement is less than or equal to 15 CFM, dwelling-unit ventilation is not required. This de-minimis level has been incorporated into ASHRAE 62.2-2016 (Normative Appendix A2).
- Q. If a home has an unfinished basement with a washer and dryer, should I count the square footage of the basement in the floor area for ventilation rate calculations?**
- A. Potentially. If the space is conditioned year-round and meets the ANSI Z764 definition of “finished area”, which is: “An enclosed area in a house that is suitable for year-round use, embodying walls, floors, and ceilings that are similar to the rest of the house”, or if the Grantee has adopted addendum M of the ASHRAE 62.2-2016 standard which added the following language: “except that unfinished below-grade, occupiable areas inside the pressure boundary shall be included as floor area.” The Grantees will need to provide written instructions for Subgrantees to follow when calculating the proper floor area for use in the required ASHRAE calculation and include a note in their H&S plans that addendum M has been incorporated into the Grantee’s program.
- Q. When determining the number of occupants when using the Standard for the WAP, should we use the number of bedrooms plus one, or can we use the actual number of occupants?**
- A. The number of occupants used in the ventilation calculation should always be the greater of the bedrooms plus one or the actual number of occupants in the dwelling.
- Q. How much ventilation is required in bathrooms?**
- A. Although it is best practice to ventilate bathrooms, using the alternative compliance path means that you do not necessarily need to install ventilation in all bathrooms, defined as “rooms with a shower, tub, or spa.” The Standard allows airflow deficits for bathrooms with less than 50 Cubic Feet per Minute (CFM) of existing on-demand ventilation (or less than 30 CFM if there is an operable window). If installing a new exhaust fan in a bathroom it must move at least 50 CFM when operated intermittently or 20 CFM when operated continuously, as measured after installation and venting to the outdoors.
- Q. How much ventilation is required in kitchens?**
- A. Although it is a best practice to ventilate kitchens, using the alternative compliance path means that you do not necessarily need to install ventilation in all kitchens. The Standard allows airflow deficits if kitchens have less than 100 CFM of existing, on-demand ventilation (or less than 80 CFM if there is an operable window). If installing a new exhaust fan in a kitchen it must move at least 100 CFM when operated intermittently, as measured after installation and venting to the outdoors. Recirculating kitchen fans that are not vented to the outdoors must be included in the ventilation calculations but would be input as “0” CFM into the calculation.
- Q. Can the bathroom or kitchen fan also serve as the dwelling-unit ventilation fan?**
- A. Yes. The Standard allows a local bathroom or kitchen exhaust fan to also serve as the dwelling-unit ventilation fan if the fan satisfies the minimum requirements for both the local and dwelling-unit ventilation. For example, if a bathroom fan operates intermittently or continuously at the required minimum dwelling-unit ventilation rate, and when the occupant activates the local

ventilation, it increases the CFM flow of the fan enough to satisfy the requirement for local bathroom ventilation (50 CFM), then the fan meets both requirements. Alternatively, if this fan operates continuously at a minimum of 20 CFM it will also satisfy the local ventilation requirement without a boost to 50 CFM when the occupant enters the bathroom. Note that any fan that is used to satisfy the dwelling-unit ventilation rate must meet the sound requirement of 1.0 sone or less. Existing fans left in place are exempt from these sound requirements.

**Q. How do the Building Tightness Limit (BTL), Building Airflow Standard (BAS), and the Minimum Ventilation Rate (MVR) relate to ASHRAE 62.2?**

A. The BTL, BAS, and MVR, and some other existing dwelling CFM<sub>50</sub> threshold values are all based on the obsolete ASHRAE 62-1989 ventilation standard. There is no comparable threshold in the ASHRAE 62.2-2016 Standard. Homes should be tightened as much as is cost effective as determined by the audit and then ventilated according to the ASHRAE 62.2-2016 standard. Ventilation costs are paid for entirely with H&S funds and are not included in the cost-effectiveness calculations.

**Q. Why expend time and money by air sealing a home and then expend more resources by installing additional ventilation?**

A. Air sealing and mechanical ventilation are two different tasks with different goals but are both part of controlling airflow in the home; one is not appropriate without the other. Air sealing reduces uncontrolled air leakage in the dwelling which reduces heating and cooling energy costs. It also reduces the infiltration of low-quality air from spaces such as attics, crawlspaces, basements, and garages. When correctly installed, mechanical ventilation introduces predictable and controllable fresh air that reduces airborne contaminants in ways that are not possible if the home is not air sealed.

**Q. The ASHRAE standard requires a “readily accessible manual ON-OFF control” for the dwelling unit ventilation fan. How should this be interpreted?**

A. The “control” required by the standard can be the circuit breaker if it is properly labeled. Other options to encourage the operation of the local ventilation fans appropriately are motion sensors, or “boost” switches to increase flow when necessary. It is important to remember WAP is not responsible for ensuring that clients avail themselves of the various measures installed by the program. It is our responsibility to leave the home, as a system, in a condition that meets industry standards for health and safety.

## Multifamily

**Q. Does the infiltration credit apply to multifamily dwellings?**

A. The answer to this question depends upon the building type. For vertically-stacked multifamily buildings (i.e. one or more separate dwelling-units are physically located above another within the building structure), the infiltration credit *is not permitted to be used*. For horizontally-stacked multifamily buildings, such as row houses or duplexes, the infiltration credit is allowed to be applied, but is based on the exterior building shell area exposed to the outdoors, not including shared surfaces.

## WATER HEATERS

**Q. Do I have to install expansion tanks on all water heaters?**

A. No. Expansion tanks are only required to be installed when new tanked water heaters are installed by the WAP and the water heater is supplied with cold water that passes through a check valve, pressure reducing valve or backflow preventer or if required by the AHJ. See the SWS for further clarification and requirements.

**Q. My local jurisdiction does not require expansion tanks to be installed on new water heaters, do I have to install one anyway?**

A. The requirements of the SWS supersede the AHJ if the local jurisdiction's requirements are less stringent than the SWS. However, the SWS only requires expansion tanks on newly installed water heaters if the cold-water supply passes through a check valve, pressure reducing valve or backflow preventer prior to entering the water heater.

## WORKER SAFETY

**Q. The previous H&S guidance contained numerous training requirements in the H&S guidance, but these have been removed from the newest program notice. Does this mean that H&S related training is not required?**

A. No. H&S related training is required by local, state, and federal worker safety regulations (i.e., Occupational Safety and Health Administration (OHSA), EPA, etc.) and all WAP personnel must be trained in accordance with the already existing regulations. Additionally, DOE determined that requiring training to be detailed in more than one location was redundant. Now all training for WAP workers must be included in a single location in the Annual File in the T&TA section (V.8.4), including related H&S training deemed necessary by the overarching regulations that already exist.